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| 09/819,147 | 03/27/2001 | Indra Laksono | VIXS.0100010 | 2664 |

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| EXAMINER |
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LEE, RICHARD J

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| ART UNIT | PAPER NUMBER |
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2613

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/819,147

Applicant(s)
Laksono

Examiner
Richard Lee

Art Unit
2613



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above, claim(s) 22-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on Sep 16, 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7 6) ☐ Other:

Art Unit: 2613

1. Applicant's election with traverse of Group I drawn to claims 1-21 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the examination of all the claims does not create an undue burden on the Office, the subject matter among the groups is not independent and distinct as required by statute, and different classifications as recited by the Office are not in and of itself adequate grounds for restriction since the Office has historically allowed many applications containing claims from different classification in one patent application. This is not found persuasive because the search for one group is not required for the other group, and as such results in an undue burden on the Office. For example, the system comprising a decoder, a first memory, a scaler, and an encoder as claimed in Group I does not need the specifics of the compressed video transcoder device comprising a compressed video input stream that utilizes frame deltas and motion vectors, a first interface, a second interface, a third interface, and control input as claimed in Group III. And contrary to the applicants' arguments, these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification. Further, though the Office may have allowed many applications containing claims from different classifications in one patent application, this does not prove that a proper restriction could not have been made in the first place. The applicants are further informed that it is up to the Examiner's discretion whether to restrict, if appropriate as in the present case, a patent application for examination.

The requirement is still deemed proper and is therefore made FINAL.

Art Unit: 2613

2. The applicant is informed that the amendment filed September 16, 2002 making changes to the reference numbers in Figure 2 of the drawings to numbers 205-295 has not been approved by the Examiner. The reference numbers as proposed in Figure 2 does not correspond to the Specification. The Specification instead supports the original reference numbers 310-495 as current shown in Figure 2 of the drawings.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "up-scaler" as specified in claim 5 and "scaled-up representation" as specified in claim 14, respectively, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2613

5. Claims 5, 14, and 21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The present invention involves a transcoder comprising an encoder and decoder with the respective functions as shown in Figure 2 of the drawings. The Specification however lacks enablement for the particular scaler being an up-scaler, the scaled-up representation being a scaled-up representation, and wherein the number of vectors in the one or more second motion vectors is greater than the number of vectors in the plurality of first motion vectors as claimed in the respective claims. The Specification discloses at most a scaler 390 of Figure 2 for down scaling a group of picture elements to create another group consisting of less picture elements (see page 3, line 18 to page 4, line 2 of the Specification), and a new motion vector building process 450 of Figure 2 for averaging the plurality of first motion vectors or providing the most frequently occurring motion vector, wherein both motion vector building processes provide the number of vectors in the one or more second motion vectors being less than the number in the plurality of first motion vectors (see page 5, line 25 to page 6, line 2 of the Specification).

6. Claims 11-21 are objected to because of the following informalities:

- (1) claim 11, line 5, "moresecond" should be changed to "more second" for clarity;
- (2) claim 11, line 7, "moresecond" should be changed to "more second" for clarity; and

Art Unit: 2613

(3) claim 16, line 2, after “portion”, “of” should be properly inserted for clarity.

Appropriate correction is required.

7. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For examples:

(1) claim 1, line 5, “the video decoder” shows no clear antecedent basis;

(2) claim 2, line 2, “the video decoder” shows no clear antecedent basis;

(3) claim 3, lines 1-2, the phrase “wherein the representation of the decoded video is the decoded video” as claimed is vague and indefinite in that it is unclear what is considered the representation of the decoded video is the decoded video as claimed;

(4) claim 6, line 1, “the video encoder” shows no clear antecedent basis; and

(5) claim 10, line 1, wherein the claim claims the “MPEG” recommendation is indefinite because there are many versions of the MPEG recommendations and the recommends are continuously updated. The scope of the claim limitations cannot change over time, and unless the applicant provides in the remarks section of a response to this Office Action stating the specific MPEG version with the date or a copy of the MPEG recommendation is provided, the claim is considered indefinite.

Art Unit: 2613

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyce et al (5,635,985) in view of Takahashi et al (6,005,623).

Boyce et al discloses a low cost joint HD/SD television decoder as shown in Figures 1 and 2A, and substantially the same system and method as claimed in claims 1-3, 5, 10-12, and 14 comprising substantially the same decoder (i.e., 120, 122, 124, 126, , 128, 129, 132-135, 202, 204,206, 208 of Figure 2) to receive a video input having one or more motion vectors, the decoder to provide decoded video and first motion vectors associated with the video input stream (see column 6, lines 18-38); a first memory (116 of Figure 2A) coupled to the video decoder to store the first motion vectors (see column 6, lines 18-38); an up-scaler (i.e., 131 of Figure 2A, and see column 14, lines 3-19) coupled to the decoder to receive the decoded video and to provide a scaled video; a second memory (i.e., 118 of Figure 2A) coupled to the video decoder to store a representation of the decoded video, wherein the representation of the decoded video is the decoded video; wherein the video input is an MPEG data input stream (see column 1); determining a plurality of first motion vectors associated with a compressed first video image (see

Art Unit: 2613

column 6, lines 18-38); storing a representation of the first video image after the step of determining (i.e., 118 of Figure 2A);

Boyce et al does not particularly disclose, though, the followings:

(a) an encoder coupled to the scaler and the first memory to provide a compressed representation of the scaled video using the first motion vectors saved in the first memory, wherein the video encoder has a vector generation portion that provides second motion vectors based on the first motion vectors saved in the first memory, and generating a compressed second video image based upon one or more second motion vectors and a second video image, wherein the second video image is a scaled representation of the first video image, as claimed in claims 1, 6, 11, 12; and

(b) wherein the scaler is a down-scaler and the scaled representation is a scaled-down representation as claimed in claims 4 and 13.

Regarding (a) and (b), Takahashi et al discloses a video transcoder as shown in Figures 2A-2D, and teaches the conventional use of an encoder (i.e., 20-25, 25', 26, 27) being coupled to a scaler (i.e., 28, 29 of Figure 2C) and a first memory (i.e., 26 of Figure 2C) to provide a compressed representation of the scaled video using first motion vectors (see column 9, lines 23-44), wherein the video encoder has a vector generation portion that provides second motion vectors based on the first motion vectors (i.e., the first motion vectors provided to scaling circuit 29 as scaled to provide the second motion vectors, see column 9, lines 23-44), generating a compressed second video image based upon one or more second motion vectors and a second

Art Unit: 2613

video image, wherein the second video image is a scaled representation of the first video image (i.e., as provided by encoder as shown in Figure 2C), and wherein the scaler is a down-scaler and the scaled representation is a scaled-down representation (see column 9, lines 23-44). Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al and Takahashi et al references in front of him/her and the general knowledge of video transcoders, would have had no difficulty in providing the video encoder being coupled to a down-scaler and a first memory to provide a compressed representation of the scaled video using first motion vectors, the video encoder with a vector generation portion that provides second motion vectors based on the first motion vectors, and wherein the second video image is a scaled representation of the first video image all as taught by Takahashi et al within the system as shown in Figure 2A of Boyce et al for the same well known video transcoding purposes as claimed.

10. Claims 7, 8, 15, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Boyce et al and Takahashi et al as applied to claims 1-6 and 10-14 in the above paragraph (9), and further in view of Yin et al of record (Video Transcoding by Reducing Spatial Resolution).

The combination of Boyce et al and Takahashi et al discloses substantially the same system and method as above, but does not particularly disclose wherein a specific vector of the second motion vectors is based on a plurality of vectors of the first motion vectors, wherein the specific vector of the second motion vectors is based on an average of at least two vectors of the first motion vectors, wherein the step of generating the one or more second motion vectors includes

Art Unit: 2613

averaging at least a portion of the plurality of first motion vectors to represent a vector in the one or more second motion vectors, wherein a number of vectors in the one or more second motion vectors that represents the second video image is different than a number of vectors in the plurality of first motion vectors that represent the first video image, and wherein the number of vectors in the one or more second motion vectors is less than the number of vectors in the plurality of first motion vectors as claimed in claims 7, 8, 15, 17, 19, and 20. However, Yin et al discloses a video transcoder as shown in Figure 4, and teaches the conventional use of a specific vector of the second motion vectors based on a plurality of vectors of the first motion vectors, wherein the specific vector of the second motion vectors is based on an average of at least two vectors of the first motion vectors (see Figure 1 and section 3.1), wherein a number of vectors in the one or more second motion vectors that represents the second video image is different than a number of vectors in the plurality of first motion vectors that represent the first video image, and wherein the number of vectors in the one or more second motion vectors is less than the number of vectors in the plurality of first motion vectors (i.e., all the first vectors as shown in Figure 1 are reduced to the single average vector, wherein the single average vector represents the specific vector, and thereby provides the number of vectors in the one or more second motion vectors being less than the number of vectors in the plurality of first motion vectors, see section 3.1). Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al, Takahashi et al, and Yin et al references in front of him/her and the general knowledge of the averaging of motion vectors, would have had no difficulty in providing the specific vector of the

Art Unit: 2613

second vectors based on a plurality of vectors of the first motion vectors, wherein the specific vector of the second motion vectors is based on an average of at least two vectors of the first motion vectors, wherein a number of vectors in the one or more second motion vectors that represents the second video image is different than a number of vectors in the plurality of first motion vectors that represent the first video image, and wherein the number of vectors in the one or more second motion vectors is less than the number of vectors in the plurality of first motion vectors all as taught by Yin et al as part of the video transcoder processings within the combination of Boyce et al and Takahashi et al for the same well known motion estimation with averaging of motion vectors purposes as claimed.

11. Claims 9, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Boyce et al and Takahashi et al as applied to claims 1-6 and 10-14 in the above paragraph (9), and further in view of Samad et al (5,027,203)

The combination of Boyce et al and Takahashi et al discloses substantially the same system and method as above, but does not particularly disclose wherein a specific vector of the second motion vectors is based on a most frequently occurring vector of the first motion vectors, wherein the step of generating the one or more second motion vectors includes selecting a most frequently occurring vector in a portion the plurality of first motion vectors to represent a vector in the one or more second motion vectors as claimed in claims 9, 16, and 18. The particular video motion estimations involving the motion vector reduction process of providing the most frequently occurring motion vectors is however old and well recognized in the art, as exemplified by Samad

Art Unit: 2613

et al (see column 15, line 61 to column 16, line 13). Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al, Takahashi et al, and Samad et al in front of him/her and the general knowledge of motion vector reductions, would have had no difficulty in providing the motion vector reduction process of providing the most frequently occurring motion vectors as taught by Samad et al for the transcoding system as provided in the combination of Boyce et al and Takahashi et al for the same well known motion estimation refinement purposes as claimed.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kato, Feder et al, Pearlstein et al, Kim, and Nilsson et al disclose various types of video encoders.

13. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Art Unit: 2613

or faxed to:


(703) 872-9314, (for formal communications intended for entry)

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group customer service whose telephone number is (703) 306-0377.


RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

8/8/03

